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ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			EXAMINER SHEDRICK, CHARLES TERRELL	
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/501,513
Filing Date: February 07, 2005
Appellant(s): SAGFORS ET AL.

Steven Ware Smith/Jennifer Hardin
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/19/10 appealing from the Office action mailed 5/19/10.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

50-53, 55-60, 62 and 63.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN

REJECTIONS.” New grounds of rejection (if any) are provided under the subheading “NEW GROUNDS OF REJECTION.”

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant’s brief.

(8) Evidence Relied Upon

2003/0043844	Heller	03-2003
5457680	Kamm et al.	10-1995

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 50-53, 55, 57-60 and 62 are rejected under 35 U.S.C. 102(b) as being anticipated by Grube et al., US Patent No.: 5,583,869, hereinafter, ‘Grube’

Consider **claim 50**, Grube teaches a method of channel resource allocation in a wireless communications system(e.g., **method illustrated in figures 2-4**), said method comprising the steps of: sniffing one or more data transmissions to or from a data provider for information within one or more application-level data packets(i.e., **the controller 108 monitors message transfer as noted in at least -col. 2 lines 66-col. 3 line 4, col. 4 lines 66-67, col. 8 lines 65-67**),

the information being related to application-level data object size (i.e., **message length or any other parts of the message (e.g., grade of service etc.) which is hereby interpreted as at least ‘related’ as noted in at least figure 1, col. 5 lines 7-12 and 47-50**); and allocating radio resources as a function of said data object size(e.g., **a wireless communication resources as noted in at least abstract, figure 2 element 203 and figure 4, col. 3 lines 25-27 and 55-60**), wherein said step of allocating radio resources comprises the step of predicting a future data rate from the information related to data object size (e.g., **resources are allocated based on needs at time $t > 0$ which involves increasing throughput rate as noted in col. 6 lines 15-16 which is further based on/proportional to the predicted message completion time as noted in figures 2 and 3**).

Consider **claim 57**, Grube A system for channel resource allocation in a wireless communications system, said method comprising: means for sniffing one or more data transmissions to or from a data provider for information within one or more application-level data packets(i.e., **the controller 108 monitors message transfer as noted in at least -col. 2 lines 66-col. 3 line 4, col. 4 lines 66-67, col. 8 lines 65-67**), the information being related to application-level data object size(i.e., **message length or any other parts of the message (e.g., grade of service etc.) which is hereby interpreted as at least ‘related’ as noted in at least figure 1, col. 5 lines 7-12 and 47-50**); and means for allocating radio resources as a function of said data object size(e.g., **a wireless communication resources as noted in at least abstract, figure 2 element 203 and figure 4, col. 3 lines 25-27 and 55-60**), wherein said means for allocating radio resources comprises means for predicting a future data rate from the information related to data object size(e.g., **resources are allocated based on needs at time $t > 0$ which**

involves increasing throughput rate as noted in col. 6 lines 15-16 which is further based on/proportional to the predicted message completion time as noted in figures 2 and 3).

Consider **claims 51 and 58 and as applied to claims 50 and 57**, Grube teaches wherein said step of allocating radio resources comprises the step of selecting one or more channel characteristics (e.g., **scheduling of timeslots and shared usage of available resources –figure 3 –element 303 and col. 3 lines 33-39**).

Consider **claims 52 and 59 and as applied to claims 50 and 57**, Grube teaches wherein said one or more data transmissions are sniffed in an uplink direction (**i.e., inbound and outbound traffic corresponds to monitoring traffic on the uplink and downlink based on the outbound and inbound transmission-see outbound and inbound resource allocation noted col. 3 lines 33-53**).

Consider **claims 53 and 60 and as applied to claims 50 and 57**, Grube teaches wherein said one or more data transmissions are sniffed in a downlink direction(**i.e., inbound and outbound traffic corresponds to monitoring traffic on the uplink and downlink based on the outbound and inbound transmission-see outbound and inbound resource allocation noted col. 3 lines 33-53**).

Consider **claims 55 and 62 and as applied to claims 51 and 58**, Grube teaches wherein said channel characteristics are selected from the group consisting of: data rate; dedicated or shared usage; scheduling; modulation; spreading code spreading factor; and transmission power(**e.g., scheduling of timeslots and shared usage of available resources –figure 3 –element 303 and col. 3 lines 33-39**).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 56 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grube et al., US Patent No.: 5,583,869, hereinafter, 'Grube' in view of Heller US Patent Pub. No.: 2003/0043844 A1.

Consider **claims 56 and 63 and as applied to claims 50 and 57**, Grube teaches the claimed invention except, wherein one or more of said application-level data packets are cached prior to being transmitted using said radio resources.

However, in analogous art, Heller teaches wherein one or more of said application-level data packets are cached prior to being transmitted using said radio resources (**i.e., packets are stored in cache and upon release transmitted over wireless link as noted in at least paragraph 0033 – see also at least figures 2 and 6 and paragraphs 0031-0032**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Grube to include wherein one or more of said application-level data packets are cached prior to being transmitted using said radio resources for the purpose of optimizing the wireless link and data transmissions as taught by Heller.

(10) Response to Argument

1. Applicant argues:

1.) CLAIMS 50-53, 55, 57-60 AND 62 ARE NOT ANTICIPATED BY GRUBE, et al.
(U.S. PATENT NO. 5,583,869)

The Examiner has rejected claims 50-53, 55, 57-60 and 62 as being anticipated by Grube, et al.
(U.S. Patent No. 5,583,869). The Applicants traverse the rejections.

It must be remembered that anticipation requires that the disclosure of a single piece of prior art reveals every element, or limitation, of a claimed invention. Furthermore, the limitations that must be met by an anticipatory reference are those set forth in each statement of function in a claims limitation, and such a limitation cannot be met by an element in a reference that performs a different function, even though it may be part of a device embodying the same general overall

concept, Whereas Grube fails to anticipate each and every limitation of claim 50, that claim is not anticipated thereby.

Claim 50 recites:

50. A method of channel resource allocation in a wireless communications system, said method comprising the steps of: sniffing one or more data transmissions to or from a data provider for information within one or more application-level data packets, the information being related to application-level data object size; and allocating radio resources as a function of said data object size, wherein said step of allocating radio resources comprises the step of predicting a future data rate from the information related to data object size. (emphasis added)

The Applicants' invention is directed to allocation of channel resources in a wireless communications system. To efficiently allocate channel resources, the invention sniffs data transmissions for information related to application-level data object size. Based on such data object size, a future data rate is predicted and appropriate radio resources are allocated. Grube fails to teach that combination of elements. the predicted message completion time as noted in figures 2 and 3." (Advisory Action; page 4, line 10, et seq.; emphasis added) The Applicants can find no teaching in Grube regarding allocating based on predicted needs at time "t+0."

What Grube does teach is allocating resources based on a grade of service. According to Grube, a "grade of service can be based on one or more metrics, including the predicted completion time for a message and an average message delay profile." (Column 5, line 9, et seq.; emphasis added). Subsequently, Grube teaches that the determination of a predicted completion time for a message "is based on the initial message length estimate 107" (column 5, line 46, et seq.). As described at column 3, line 61, et seq., the message length is contained in the header 107 of a

data message 108 (column 3, line 61, et seq.), as illustrated in Figure 1. Thus, whereas Grube teaches a grade of service based on an initial message length contained in a message header, it is inherently not based on a prediction of a future data rate based on information related to data object size, which is obtained by sniffing for information within one or more application-level data packets within a data transmission. In other words, Grube teaches explicitly including message type and message length information in the header of a message. In contrast, the Applicants' invention does not require the inclusion of such information in a message header, rather, the Applicants' invention is characterized by sniffing the message portion of a packet, which contains application-level data packets, for information related to the size of the application-level data object. Grube does not disclose such sniffing of application-level data packets within a message.

2. However, The Examiner respectfully disagree with the Applicant.

As a first matter, One must carefully consider the actual claim language. The Claims indicate "a data packet (with emphasis), one of ordinary skill in the art would recognize that a packet consists of (amongst other elements) at least 1) a header, 2) payload and 3) a trailer. The Applicant attempts to distinguish the claimed invention over the prior art by indicating that the prior art analyzes the header information. However, even the header of the message is part of the actual packet (packet = header +payload + trailer). It appears that the Applicant is attempting to indicate that the claims are directed toward analyzing a payload, however as explained previously the claim language broadly reads on the entire packet. Therefore, the prior art would still read on the claimed invention. As a second matter, The claim language further indicates that "the information within the packet" (as a whole) is merely "related to" to application-level data

object size. The Examiner respectfully submits that each and every element in the message is “related to” the application data object size since each element plays a role in construction, retrieval and/or transmission of the application data object size. The interpretation is based on the broadest reasonable absent instruction as to what the relationship may entail.

3. Applicant further argue

Furthermore, Grube teaches that an average message delay profile is based on “running averages of the transmission delays encountered for each message type” (column 8, line 52, et seq.). Thus, whereas Grube teaches a grade of service based on an average message delay, which is based on an historical measure of transmission delay it is inherently not based on a prediction of a future data rate based on information related to data object size, which is obtained by sniffing for information within one or more application-level data packets within a data transmission.

4. However, The Examiner respectfully disagrees. Consider the limitation, a future data rate is predicted. The future data rate includes the bits/time it takes bits to be transferred at time $t > 0$ (e.g., the future) or the expected data rate. Another way to view this statement is that, at time $t > 0$, a particular data rate is expected and accordingly, an appropriate radio resources are allocated. Consider that the predicted completion time (e.g., seconds) for a message is directly related to the rate at which the bits are transferred (i.e., the data rate = bits/second transferred). The data message includes the number of bits. Therefore, in order to predict the completion time, one must essentially predict or expect what the future data rate will be, albeit the current rate or a different rate (i.e., predicting that that current data rate will be maintained). In the instant case, the future/expected data rate =

$$\frac{\text{estimated_number_of_untransmitted_data_bits}}{\text{predicted_completion_time}}$$
 (bits/seconds). Carefully note the

units in bits per second reflecting a data rate, which is predicted/expected to happen (e.g., in the future). As noted, the future data rate is proportional to the predicted time resulting in a predicted data rate. Grube et al. note that the controller calculates the predicted completion time noted above “by dividing the estimate of the number of untransmitted bytes by the current transfer rate of the first number of wireless communication resources” - col. 5 lines 50-57. Furthermore, by allocating a greater number of resources, the transfer rate is increased - col. 6 lines 15-16. Applicant argues that Grube fails to teach the allocation of radio resources based on a predicted future data rate, however, based on the explanation above the examiner respectfully disagree. Furthermore, carefully note that one particular manner in which Grube allocates resources is based on determining if the transfer rate of a application message (e.g., x-ray file) is sufficient to proceed into the future (e.g., $t > 0$) at the current rate or some different rate. In other words, is the current rate a sufficient future transfer rate based on the message length/completion time or does the system need a more comparable future rate via additional resources- col. 5 line 64-col. 6 line 21.

5. Applicant argues

- a. 2.) CLAIMS 56 AND 63 ARE PATENTABLE OVER GRUBE IN VIEW OF HELLER

The Examiner has rejected claims 56 and 63 as being unpatentable over Grube in view of Heller (U.S. Patent Publication No. 2003/0043844 A1). As established supra, independent claims 50 and 57 are not anticipated by Grube. The Examiner

has not pointed to any teaching in Heller to overcome the deficiencies in the teachings of Grube; thus, claims 50 and 57 are patentable over Grube in combination with Heller. Therefore, whereas claims 56 and 63 are dependent from claims 50 and 57, respectively, and include the limitations thereof, they are also patentable over Grube in view of Heller.

6. The Examiner respectfully disagree

Claims 56 and 63 are dependent from claims 50 and 57, respectively, and include the limitations thereof, they are also not patentable over Grube in view of Heller.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Charles Shedrick/

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